

# ***Annual Drinking Water Quality Report for 2021***

## **Cumberland County Water System**

### ***PWSID No. 5049150***

#### **INTRODUCTION**

This Annual Drinking Water Quality Report for calendar year 2021 is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you have questions about this report, please contact:

|                                    |
|------------------------------------|
| <b>RAYMOND ALLEN: 804/492-9267</b> |
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If you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact

|                                    |
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| <b>RAYMOND ALLEN: 804/492-9267</b> |
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The times and location of regularly scheduled board meetings are as follows:

|  |
|--|
| The second Tuesday of each month at 7:00 p.m. / County Courthouse, 1 Courthouse Circle |
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#### **GENERAL INFORMATION**

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants in source water may be naturally occurring substances, or may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban stormwater runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water and provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

All drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or by visiting [www.epa.gov/safewater](http://www.epa.gov/safewater).

## **VULNERABLE POPULATIONS**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

## **SOURCE(S) AND TREATMENT OF YOUR DRINKING WATER**

The source of your drinking water is groundwater drawn from drilled wells (Wells No. 1, 2 & 3). Your drinking water is treated with a sodium hypochlorite solution for disinfection and oxidation purposes, soda ash for pH adjustment and potassium permanganate for iron, manganese and manganese removal. Your drinking water is filtered through a greensand filter to remove the iron and manganese.

A source water assessment during 2020. The wells (No. 1, 2 & 3) were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last 5 years. The report is available for review by contacting Raymond Allen at 804/492-9267.

## **WATER CONSERVATION TIPS**

Did you know that the average U.S. household uses approximately 350 gallons of water per day? Luckily, there are many low-cost or no-cost ways to conserve water. Water your lawn at the least sunny times of the day. Fix toilet and faucet leaks. Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath. Turn the faucet off while brushing your teeth and shaving; 3-5 gallons go down the drain per minute. Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!

## **DEFINITIONS**

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table on the next page shows the results of this monitoring for the period of January 1<sup>st</sup> through December 31<sup>st</sup>, 2021. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

*Non-detects (ND)* - lab analysis indicates that the contaminant is not detectable, based on the limits of the analytical equipment used.

*Parts per million (ppm) or Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or one penny in \$10,000.

*Parts per billion (ppb) or Micrograms per liter (µg/l)* - one part per billion corresponds to one minute in 2,000 years, or one penny in \$10,000,000.

*Parts per trillion (ppt) or Nanograms per liter (ng/l)* - one part per trillion corresponds to one minute in 2,000,000 years, or one penny in \$10,000,000,000.

*Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.

*Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

*Action Level (AL)* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

*Treatment Technique (TT)* - a required process intended to reduce the level of a contaminant in drinking water.

*Maximum Contaminant Level Goal (MCLG)* - the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

*Maximum Contaminant Level (MCL)* - the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

*Variances and exemptions* - state or EPA permission not to meet an MCL or a treatment technique under certain conditions

## WATER QUALITY RESULTS

We routinely monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

| Microbiological Contaminants            |         |                           |  |            |                           |  |
|---|---------|---------------------------|--|------------|---------------------------|--|
| Contaminant / Unit of Measurement       | MCLG    | MCL                       | Level Found  | Violation  | Date of Sample            | Typical Source of Contamination  |
| <b>Total Coliform Bacteria</b>          | 0       | 1 positive monthly sample | <b>None Detected</b>   | No         | Monthly 2021              | Naturally present in the environment   |
| Inorganic Contaminants                  |         |                           |  |            |                           |  |
| Contaminant / Unit of Measurement       | MCLG    | MCL                       | Level Found  | Violation  | Date of Sample            | Typical Source of Contamination  |
| <b>Nitrate (ppm)</b>                    | 10      | 10                        | Below Detection Limits   | No         | February / August 2021    | Fertilizer use runoff; septic tank / sewage leaching; erosion of natural deposits            |
| <b>Barium (ppm)</b>                     | 2       | 2                         | Highest Result: 0.012<br>Range: 0.011 – 0.012  | No         | June 2019 / May 2021      | Erosion of natural deposits, discharge from metal refineries, discharge from drilling wastes |
| Radiological Contaminants               |         |                           |  |            |                           |  |
| Contaminant / Unit of Measurement       | MCLG    | MCL                       | Level Found  | Violation  | Date of Sample            | Typical Source of Contamination  |
| <b>Alpha emitters (pCi/L)</b>           | 0       | 15                        | <b>Highest Result: 7.1</b><br>Range: 2.9 – 7.1   | No         | June 2019 / February 2020 | Erosion of natural deposits  |
| <b>Combined radium (pCi/L)</b>          | 0       | 5                         | <b>Highest Result: 4.0</b><br>Range: 1.1 – 4.0   | No         |                           | Erosion of natural deposits  |
| <b>Beta Emitters (pCi/L)</b>            | 0       | 50                        | <b>Highest Result: 5.6</b><br>Range: 4 – 5.6   | No         |                           | Decay of natural and man-made deposits   |
| Disinfectants / Disinfection Byproducts |         |                           |  |            |                           |  |
| Contaminant / Unit of Measurement       | MCLG    | MCL                       | Level Found  | Exceedance | Date of Sample            | Typical Source of Contamination  |
| Total Trihalomethanes - TTHM (ppb)      | N/A     | 80                        | <b>10</b>  | No         | September 2021            | Byproduct of drinking water chlorination / disinfection                                      |
| Total Haloacetic Acids – HAA5 (ppb)     | N/A     | 60                        | <b>3.1</b>   | No         | September 2021            | Byproduct of drinking water chlorination / disinfection                                      |
| Chlorine Residual (ppm)                 | MRDLG 4 | MRDL 4                    | Highest Quarterly Avg.: <b>0.91</b><br>Range: 0.39 to 1.27   | No         | Monthly 2021              | Water additive for disinfection to control microorganisms                                    |
| Lead and Copper                         |         |                           |  |            |                           |  |
| Contaminant / Unit of Measurement       | MCLG    | MCL                       | Level Found  | Exceedance | Date of Sample            | Typical Source of Contamination  |
| Copper (ppm)                            | 1.3     | 1.3                       | <b>0.3</b> (90th Percentile)<br>Range: ND to 0.4<br>All ten samples were below the respective Action Level | No         | September 2020            | Corrosion of household plumbing systems; Erosion of natural deposits                         |
| Lead (ppb)                              | 0       | 15                        | <b>7.3</b> (90th Percentile)<br>Range: ND to 8.0<br>All ten samples were below the respective Action Level | No         | September 2020            | Corrosion of household plumbing systems; Erosion of natural deposits                         |

| <b>Volatile Organic Compounds</b> |       |       |               |            |                |  |
|-----------------------------------|-------|-------|---------------|------------|----------------|--|
| Contaminant / Unit of Measurement | MCLG  | MCL   | Level Found   | Exceedance | Date of Sample | Typical Source of Contamination                          |
| 1,2-Dichloroethane (ppb)          | 0.005 | 0.005 | <b>0.0006</b> | No         | February 2020  | Discharge from industrial processes / chemical factories |

Most of the results in the table are from testing done in 2020 and 2021. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our results, though representative, are more than one year old.

Other drinking water constituents you may be interested in are as follows:

Water samples collected in June 2019 and May 2021 reported additional parameters that may be of interest. Sodium was detected in treated water at concentrations of 38.3 mg/L and 31.4 mg/L. The EPA has established a recommended level of 20 mg/L, which is the optimal level established for individuals on a sodium restricted diet. The elevated sodium concentration is most likely a result of the soda ash pH adjustment treatment.

In addition, routine compliance sampling in May 2021 detected zinc at a concentration of 0.16 mg/L, which did not exceed its Secondary Maximum Contaminant Level (SMCL) of 5 mg/L. The presence of zinc may result in a metallic taste in the drinking water, and products made with water such as coffee and tea.

**SODIUM:** According to results of the chemical analyses for Metals based on a sample collected on June 3, 2019 for Well No. 3, the sodium in the treated water is 38.3 mg/L. This is above the EPA recommended optimal level of less than 20 mg/L for sodium in drinking water, which is established for those individuals on a “strict” sodium intake diet.

According to results of the chemical analyses for Metals based on a sample collected on June 26, 2018 for well No. 1&2, the sodium in the treated water is 10.8mg/L. This is below the EPA recommended optimal level of less than 20 mg/L for sodium in drinking water, which is established for those individuals on a “strict” sodium intake diet.

Most of the results in the table are from testing done in 2019. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our results, though representative, are more than one year old.

The U.S. Environmental Protection Agency sets MCLs at very stringent levels. In developing the standards EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-one-million chance of having the described health effect for other contaminants.

## **VIOLATION INFORMATION**

The Cumberland County Water System received no monitoring / reporting violations.

### **ADDITIONAL INFORMATION FOR LEAD**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Cumberland County Water System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 15 to 30 seconds or until it becomes cold or reaches a steady temperature before using water for drinking or cooking. If

you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

It is the goal of the Cumberland County Water System to consistently provide our customers with the highest possible water quality. In our efforts to achieve this goal, comments and questions from our customers are welcomed. Please feel free to contact our representative, Raymond Allen with any concerns at 804/492-9267  
*THANK YOU!*